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**table I**

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(54) Abstract Title

**Method and apparatus for sending encrypted electronic mail through a distribution list exploder**

(57) One embodiment of the present invention provides a system for sending an encrypted message through a distribution list exploder in order to forward the encrypted message to recipients on a distribution list. The system operates by encrypting the message at a sender using a message key to form an encrypted message. The system also encrypts the message key with a group public key to form an encrypted message key. The group public key is associated with a group private key to form a public key-private key pair associated with a group of valid recipients for the message. Next, the system sends the encrypted message and the encrypted message key to the distribution list exploder, and the distribution list exploder forwards the encrypted message to a plurality of recipients specified in the distribution list. After receiving the encrypted message and the encrypted message key, the recipient decrypts the encrypted message key to restore the message key. Next, the recipient decrypts the encrypted message using the message key to restore the message. In a variation on the above embodiment, the recipient decrypts the encrypted message key by sending the encrypted message key from the recipient to a group server, which holds the group private key. The group server decrypts the encrypted message key using the group private key to restore the message key, and returns the message key to the recipient in a secure manner.

